Lander Challenge Team Application

This application is intended as a way to ensure teams pursuing this challenge are taking responsibility for their safety, and have robust programs in place.

The application process consists of submitting an application, and then being interviewed by the CPLC safety council. Teams should prepare a 10-15m presentation with visuals for the interview, overviewing this application and other details (such as introducing the team & members). The team's primary leadership team should all be present in the interview, especially any safety leadership. The council will make a decision, and provide feedback. If denied, teams are encouraged to act on feedback and re-apply in the future. Please note that if your team has, for example, never hotfired a liquid engine, the safety council will expect you to demonstrate a strong understanding of what lies ahead, how to work with liquid engines, and safety procedures.

Any gross exaggeration or claims to be found untrue, or procedures/standards described here which are not followed whilst pursuing the challenge, may result in immediate disqualification from the challenge. You are encouraged to include any supplementary materials.

Application Questions:

1) Describe your safety program in detail– who is responsible, how safety is enforced and regulated, etc.

2) Do you have insurance, for on-site manufacturing and testing, or for hotfire/launching? If so, how much and what does the policy cover?

3) Describe your relationship with your university. How involved are they in your decision making, testing/launch process, insurance, safety and facilities.

4) Please name and provide a brief background of your faculty advisor(s), external mentors and other involved parties.

5) Describe your manufacturing, building & testing facilities and process – who, what, where – and how safety is maintained & regulated. For example, what sort of training processes do team-members go through before machining? Who does the training, and who is responsible for accidents?

6) Describe your heavy lift & transport operations procedure. How would you approach lifting and moving a 250+ lb vehicle using a forklift?

7) Describe in detail your procedure for working with high-voltage or otherwise potentially dangerous electronic systems. How do you handle and work with various types of batteries?

8) Describe in detail where and how you store chemicals or pyrotechnic devices of various types. How do you handle and work with chemicals and propellants? What procedures are in place? Who handles chemicals and how are they trained?

9) Describe in detail how you approach high pressure testing and/or testing involving chemicals, propellants, pyrotechnics etc, other than hot-fires and launches (below). Please go into detail about who, what, when, where and how these tests are conducted, and how you maintain an extremely high standard of safety. You should demonstrate a clear and strong understanding of what high pressure systems are, and how to work with them.

10) What are your oxidizer cleaning processes? Describe your procedures and where they came from. Describe your approach to the design, handling & operation of oxidizer systems. You should demonstrate a strong understanding of the complexities involved.

11) Robustly describe your hotfire & launch procedures– design reviews, responsible parties, etc – who/what/where/why/when/how.

12) Outline a procedure for a 10s tethered hover test as required by this challenge, explaining decisions/procedure components.

13) Outline a procedure for a 50m hop test as required by this challenge, explaining decisions/procedure components. Address the kill switch requirement and other safety components.

14) What hotfire and/or launch tests have you conducted in the past 5 years? Include propellant types, forces/altitudes desired & achieved, other specific technical goals and how you handled any non-nominal events.

15) Describe your risk and/or issue identification and resolution process(es) in detail. How are they tracked throughout design and test/operations? How are changes or lessons learned communicated to the larger team and integrated?